UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1998-0963

April 16, 1998

Fred P. Patron
Federal Highway Administration
The Equitable Center, Suite 100
530 Center St. NE
Salem, OR 97301

Re: Biological Opinion on the Weatherly Creek Bridge & Paradise Creek Bridge

Dear Mr. Patron:

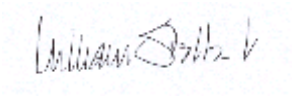
The National Marine Fisheries Service (NMFS) has enclosed the Biological Opinion (BO) for the replacement and realignment of Weatherly Creek bridge and the widening of the Paradise Creek bridge along Highway 38 described in the Oregon Department of Transportation (ODOT) Umpqua Non-Project Specific Programmatic Biological Assessment, and the technical report. The actions described in this BO were reviewed separately from the those actions to be considered under the programmatic process.

This opinion considered Umpqua River cutthroat trout (*Oncorhynchus clarki clarki)* which occurs in the proposed project area. The Umpqua River cutthroat trout ESU was listed as endangered under the ESA by the NMFS (August 9, 1996, 61 FR 41514). Umpqua River cutthroat trout critical habitat has been designated (63 FR 1388) incorporating all waterways below long-standing, natural impassable barriers. This is the current freshwater and estuarine range of the listed species.

This opinion constitutes formal consultation for Umpqua River cutthroat trout. The NMFS has determined that the subject action is not likely to jeopardize the continued existence of Umpqua River cutthroat trout.

If you have any questions regarding this letter, please contact Jim Turner of my staff at (503) 231-6894.

Sincerely,



William Stelle, Jr.
Regional Administrator

Enclosure

cc: Elton Chang, FHWA
Chris Sheridan, ODOT

Endangered Species Act - Section 7
Consultation

BIOLOGICAL OPINION

Weatherly Creek Bridge & Paradise Creek Bridge [963]

Agency: Federal Highways Administration

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: April 16, 1998

Refer to: OSB1998-0963

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I. Background

On February 18, 1998, the National Marine Fisheries Service (NMFS) received from the Oregon Department of Transportation, (ODOT) a technical report providing details on the proposed actions at Weatherly Creek and Paradise Creek. The Federal Highways Administration had previously submitted a Biological Assessment (BA) and request for Endangered Species Act (ESA) section 7 consultation and conference for a variety of proposed actions in the Umpqua basin. These two proposed actions are being reviewed separately at this time to accommodate various time constraints. Oregon Department of Transportation (ODOT) is the lead agency and designated non Federal representative for transportation related actions in Oregon that are supported by funds from the Federal Highway Administration. The BA has indicated the Umpqua River cutthroat trout (*Oncorhynchus clarki clarki)* occurs in the proposed project area. The Umpqua River cutthroat trout ESU was listed as endangered under the ESA by the NMFS (August 9, 1996, 61 FR 41514). Umpqua River cutthroat trout critical habitat has been designated (January 9, 1998, 63 FR 1388) incorporating all waterways below long-standing, natural impassable barriers and the riparian corridor 300 feet on each side. This is the current freshwater and estuarine range of the listed species.

The BA and technical report describes the proposed actions that include replacement and realignment of Weatherly Creek bridge and the widening of the Paradise Creek bridge along Highway 38. The proposed actions were determined to affect the identified species. The effects determination is made using the methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). This opinion has considered only those actions that were determined to be likely to adversely affect the indicated species. These actions include bridge repair or replacement and involve placing fill, in-stream structures, and bank protection, which may affect aquatic and riparian habitat. Impacts will be minimized by limiting in-water work, vegetation removal, and sediment input. Habitat enhancement will occur within the watershed.

This consultation process has involved various steps including obtaining additional information, clarifying the BA and technical report, or modifying the proposal as needed to reduce impacts to the indicated species. An on-site meeting and various discussions were held. These discussions concerned the reduction of the potential effects of this proposed project on the stream habitat and functions. Modifications to the project at Weatherly Creek were made. These included the realignment of the bridge to avoid rechanneling the stream, bank protection methods to incorporate rock spurs and embedded logs into structures, increasing the potential for associated riparian vegetation, and fencing around the upstream bank protection site.

The objective of this biological opinion is to determine whether replacement and realignment of Weatherly Creek bridge and the widening of the Paradise Creek bridge along Highway 38 is likely to jeopardize the continued existence of Umpqua River cutthroat trout.

II. Proposed Actions

The proposal for the replacement and realignment of Weatherly Creek bridge and the widening of the Paradise Creek bridge along Highway 38 are described below.

Weatherly Creek Bridge Replacement and Paradise Bridge Widening, Umpqua Basin

The proposed Weatherly Creek bridge replacement and Paradise Creek bridge widening are located on Umpqua Highway 38 near Scottsburg, Oregon. The proposed actions include bridge repair or replacement and consist of constructing bridge support bents; constructing bridge abutments and approaches, placement of bridge spans, and placing rip rap or other bank protection on banks or in-water. The Weatherly Creek bridge replacement will include construction of bridge abutments, placement of rip rap protecting the bridge abutment, protecting the bank at an upstream meander close to the new highway alignment, and removing existing bridge and road segments. The Paradise Creek bridge widening action will include adding four bridge support bents on each side of the current bridge bents. Two of these bents will be within the stream. The Stream will be diverted through a culvert to allow in-stream work to be isolated from the stream. These actions would be constructed during summer of 1998 between July 1 to September 15.

III. Biological Information and Critical Habitat

The listing status, biological information, and critical habitat elements or potential critical habitat for indicated species are described in Attachment 1.

IV. Evaluating Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). Attachment 2 describes how NMFS applies the ESA jeopardy standards to consultations on Federal actions. This application involves defining the biological requirements of the listed species; evaluating the relevance of the environmental baseline to the species' current status; determining the effects of the proposed or continuing action on listed species; determining whether the species can be expected to survive with an adequate potential for recovery under the effects of the proposed or continuing action, the environmental baseline and any cumulative effects, and considering measures for survival and recovery specific to other life stages; and identifying reasonable and prudent alternatives to a proposed or continuing action that is likely to jeopardize the continued existence of the listed species.

A. Biological Requirements

For this consultation, NMFS finds that the biological requirements of the listed and proposed ESU's are best expressed in terms of environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the ESU's. Individual environmental factors include water quality, habitat access, physical habitat elements, and channel condition. Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are also necessary for the survival and recovery of the listed and proposed ESU's. This information is summarized in Attachment 1.

B. Environmental Baseline

The current range-wide status of the identified ESU's under the environmental baseline is described in Attachment 1. The identified actions will occur throughout some of the Umpqua River cutthroat trout range. The defined action areas for each proposed action is the area that is directly and indirectly affected. The direct impacts occur at the project site and may extend upstream or downstream based on the potential extent of fish passage obstructions, sediment and pollutant input, water temperature changes, and nutrient input. Indirect impacts and cumulative impacts may extend beyond the immediate stream corridor up slope into the watershed based on increased potential for roadways to provide access and facilitate modifications to the landscape. As such the action area for the proposed actions include the immediate watershed containing the project activities and those areas upstream and downstream that may reasonably be affected temporarily or in the long term. For the purposes of this opinion, the action area is defined by the watershed area commonly referred to as the 5th field HUC (Hydrologic Unit Code, a numeric hierarchical classification of water drainage basins develop by the US Geological Survey).

The Middle Umpqua watershed contains the Umpqua River and a number of tributaries including Weatherly Creek and Paradise Creek. Important watershed features included the salmonid migratory corridor within the Umpqua River, spawning and rearing within the tributaries, and "essential salmonid habitat" designation (ODFW 1996, DSL 1996). Issues of concern for this watershed include high temperature and increased bacterial contaminants, habitat modification including channelization and unstable banks, and riparian habitat degradation (DEQ 1996, DEQ 1998). Mitigation potential exists to reestablish riparian vegetation including mixed conifer forest, increase stream habitat diversity including backwater areas, pools with large woody debris, and improved spawning condition, and protect cold water sources (Attachment 1). The BA and technical report has presented a summary of baseline conditions in Table 4 and 5.

Based on the best available information on the current status of these ESU's range-wide (Attachment 1); the population status, trends, and genetics (Attachment 2); and the poor environmental baseline conditions within the action area -- NMFS concludes that the biological requirements of the identified ESU's within the action area are not currently being met. Improvement in habitat conditions is needed

to meet the biological requirements for survival and recovery of these species. Actions that do not restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of anadromous salmonids.

V. Analysis of Effects

A. Effects of Proposed Actions

The effects determination in this opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document "Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996). This assessment method was designed for the purpose of providing adequate information in a tabular form for NMFS to determine the effects of actions subject to consultation. The effects of actions are expressed in terms of the expected effect -- restore, maintain, or degrade -- on aquatic habitat factors in the project area. The results of the completed checklist for the proposed action provide a basis for determining the overall effects on the environmental baseline in the action area.

For each individual action covered in this opinion, the effects on aquatic habitat factors and to species considered in this opinion can be limited by utilizing construction methods and approaches that intend to minimize impacts. The effects of the proposed project have been evaluated based on the application of the *General Minimization and Avoidance Measures* as presented in attachment 3 with particular attention to timing of actions to preferred in-water work period (established by ODFW), and sediment/erosion control.

For each of the project actions described below, we expect that the effects of the project actions will tend to maintain or restore each of the habitat elements over the long-term, greater than one year. Applied at the basin-wide scale, the potential effects from the sum total of proposed actions are expected to restore properly functioning conditions on site while not further degrading the environmental baseline within the basin. The technical report presents a summary of effects in Table 4. and Table 5. The NMFS finds this information to accurately reflect conditions and expected effects. Temporary impacts from construction are indicated with a "(-)" in the effects column in the tables. It is expected that the proposed mitigation actions will result in a positive effect in the long-term.

Weatherly Creek Bridge Replacement and Paradise Creek Bridge Widening, Umpqua Basin

Weatherly Creek and Paradise Creek at proposed action sites demonstrate different characteristics. Both of these creeks are within the Middle Umpqua watershed area of approximately 300,000 km^2. Weatherly Creek can be characterized by a broad flood plain and a series of low gradient meanders. The stream is a moderately sized stream approximately 15 m wide with average depths of 1.5 m. This portion of the stream has few pools. Just upstream of the existing bridge a historic stream meander has been isolated from the stream and forms an a seasonally flooded emergent wetland. Riparian areas are

highly impacted from adjacent landuse with few trees and shrubs. Weatherly Creek drains approximately 30 km^2. Paradise Creek can be characterized by a fairly steep canyon with a small to moderate stream 10 m wide and less than 1 m deep composed of bedrock and gravel. The site is located near the mouth of the stream as it enters the Umpqua River. Paradise Creek drains approximately 40 km^2.

The expected impacts from this action include loss of in-stream riparian and aquatic habitat, loss of riparian wetlands, loss of riparian vegetation, constraint or channelization of stream, and temporary increase in turbidity. The realignment of the bridge at Weatherly Creek, including adding new abutments and placing rip rap, will affect approximately 3000 m^2 along 50 m of stream. Stream bank protection and stabilization both upstream and within the new bridge alignment will add rock structure to the bank tending to restrict stream movement with potential loss of riparian aquatic/benthic habitat. The widening of the bridge at Paradise Creek will result in temporary turbidity increases during relocation of the stream and loss of aquatic and benthic habitat associated with the new in-stream structure.

These impacts will be minimized by implementing various measures and undertaking active compensatory mitigation actions. For each of the actions an erosion control plan will be implemented to provide sediment barriers and other site preparation to control sediment input into streams. Fish passage will be maintained during construction actions. All in-water work will be conducted during the ODFW recommended in-water work periods. A hazardous material management plan will be implemented. Bridge water runoff will be redirected to each end of bridge to provide surface flow and filtering prior to entering the stream. Mitigation actions include creating and enhancing riparian and wetland habitat. These mitigation actions will involve some habitat manipulation and plantings of native trees and shrubs within the riparian zone and will provide habitat structure, and shade and will improve bank stability. Habitat enhancement actions will entail approximately 2500 m^2 at Weatherly Creek and 2000 m^2 at Paradise Creek within the project site. Logs and woody debris will be added to the bank as part of bank protection elements. An off channel historic oxbow at Weatherly Creek will be reconnected to the creek increasing high water refugia and additional habitat complexity to the site.

B. Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.." For the purposes of this analysis, the general action areas are the watersheds containing the projects. For this analysis the action area watersheds are defined by a number of small waterway. Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed

through separate section 7 consultation processes. In addition, non-Federal actions that require authorization under section 10 of the ESA will be evaluated in section 7 consultations. Therefore, these actions are not considered cumulative to the proposed action..

Current watershed land uses of forestry and agriculture are expected to continue. These activities are not consider likely to increase or further degrade the existing conditions.

VI. Conclusion

NMFS has determined that, based on the available information, proposed actions covered in this opinion are not likely to jeopardize the continued existence of Umpqua River cutthroat trout nor its critical habitat. NMFS used the best available scientific and commercial data to apply its jeopardy analysis (described in Attachment 2), when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline (described in Attachment 2), together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term adverse degradation of anadromous salmonid habitat due to sediment impacts, in-water construction noise, and habitat displacement. The proposed actions will tend to restore properly functioning conditions in the long-term through the proposed mitigation Direct mortality from this project is not expected to occur.

VII. Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. In addition to those general minimization and avoidance measures as described in the BA, NMFS recommends that ODOT pursue a cooperative agreement with the land owner to fence the stream bank along the left stream bank between the bridge right of way and the upstream bank protection site. This would increase potential for stream bank and riparian restoration by limiting physical disturbance.

In order for NMFS to be kept informed of actions minimizing or avoiding adverse effects, or those that benefit listed species or their habitat, NMFS requests notification of the implementation of any conservation recommendations.

VIII. Reinitiation of Consultation

Consultation must be reinitiated if: the amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect listed species in a way not previously considered; the action is modified in a way that causes an effect on listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

IX. References

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion.

DEQ 1996. 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1996. (www.deq.state.or.us/wq/303dlist/303dpage.htm).

DEQ 1998. Draft 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1998. (www.deq.state.or.us/wq/303dlist/303dpage.htm).

DSL 1996. Essential Indigenous Salmonid Habitat, Designated Areas, (OAR 141-102-030). Oregon Division of State Lands. Portland, Or. 1996.

NMFS (National Marine Fisheries Service) 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon.

ODFW 1996. Database -- Salmonid Distribution and Habitat Utilization, Arc/Info GIS coverages. Portland, Or. 1996. (rainbow.dfw.state.or.us/ftp/).

X. Incidental Take Statement

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patters such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not

intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

A. Amount or Extent of the Take

The NMFS anticipates that the action covered by this Biological Opinion has more than a negligible likelihood of resulting in incidental take of Umpqua River cutthroat trout, and Oregon coast steelhead because of detrimental effects from increased sediment levels and the potential for direct incidental take during in-water work. Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on the species' habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Biological Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the BA, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Biological Opinion.

B. Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measure(s) are necessary and appropriate to minimizing take of the above species:

1. In-water work at Paradise Creek including placement of concrete be done in a manner to minimize direct affect on indicated species.
2. Riparian areas at Paradise Creek and Weatherly Creek be effectively vegetated with native shrubs and trees.
3. Compensatory mitigation actions be performed to maintain or restore properly functioning habitat to include winter and cool water refugia.

C. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, ODOT must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1a. Fresh concrete will be contained within tight forms or otherwise isolated from actively flowing stream for 24 hours or more.

1b. Culverts placed to redirect stream flow during construction actions shall meet all fish passage guidelines (refer to ODFW fish passage standards.)

1c. Work will be conducted between July 1 and September 15 of the year.
2a. All planted areas as provided in mitigation plans shall be monitored for two years to achieve a 70% or greater ground coverage of plant materials
2b. Fencing will be established and maintained at Weatherly Creek along right-of-way , mitigation sites, and at the upstream bank protection site at a minimum of 5 feet from the top of bank away from the stream where potential for livestock disturbance exists.
3a. Flow into and out of wetland area upstream of bridge at Weatherly Creek will be established for a typical annual high water event and conducted in such a way as to not entrap fish.
3b. Monitoring at in-stream structures and bank protection spurs will be done annually for two years to assess results of action on in-stream habitat elements.